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## The Making of a Pen

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THE NECESSARY, common things of life we are least conscious of; air, health, sleep, water, all these are unnoticed while we have them.

The better a pen is, the less apt we are to be aware of its existence. If it transmits our thoughts smoothly, easily and untiringly, you are unconscious of it as you are of your vocal organs, but if it drags, scratches and spatters and is moody, that pen is very real to you. Good pens do not always get the credit that is due them.

There is as much difference in the quality of pens as there is in the character and ability of those who use them. The size of a thing has nothing to do with its capacity for good or evil. It is not putting the case too strongly to say that pens have a real and appreciable effect on the efficiency and comfort of those who use them daily.

The combined brain strain of thought, vision and manual motion is a very palpable thing. Do not several hours of writing tire you somewhat, and isn't it clear that only a slight pen difficulty multiplies itself into a considerable waste of energy in the course of a

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day? Hence, good quality of pens is of the highest importance to a person who writes much.

*To Those Who Use a Pen  
Constantly*

The steel pen is much preferred to any other style. It is less tiresome, more sure of stroke and makes cleaner lines and figures.

The manufacture of standard grade steel pens is quite an elaborate and complex process.

The better grade of pens are made of cold steel; steel rolled with water on it, and so accurate are these rolls that the steel is gauged to one-half thousandth part of an inch and a fine hair laid on the steel while going through the rolls leaves a perfect impression.

This cold rolling leaves the steel very hard and compact, and is one of the reasons why a standard hand made pen is so much better than a cheap machine made one. There is so much individuality in a pen that no automatic machinery can turn out a perfect article. High grade pens must be modified and made just right to the human touch.

A prominent American manufacturer was once asked why it was necessary to use such great care in

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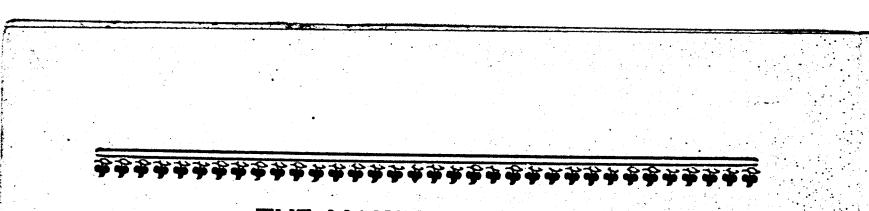
the manufacture of his goods, and quoted Michael Angelo, the famous artist, who was once correcting a little detail in one of his masterpieces, and an on-looker said, "But it is only a trifle." "Yes," answered the artist, "but trifles make perfection, and perfection is no trifle."

### *Steel Pens*

The original ink pen was a fine hair brush and even today in this country, hundreds of these pens are in daily use. The Chinese laundryman in the United States marks his packages and keeps his books with a camels hair pen. It was good enough for Confucius and it is good enough for him. But while the Chinese have clung to this type, the evolution of the pen has continued from the brush to the reed and from the reed to the quill and from the quill to steel. The Chinese Government is establishing schools where English is taught and eventually the Chinese will become users of steel pens.

The first steel pens were made by Mr. Wise, a London Stationer, in 1803, but were very expensive, somewhat crude and but little used.

About 1828 the manufacture of steel pens was begun in England for commercial purposes.



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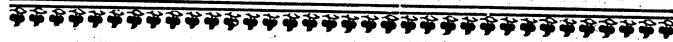
Pens pass through from fifteen to twenty hands in the course of manufacture. The consumption of Steel Pens in the United States annually approximates about five hundred million pens.

### *Process of Manufacture*

The steel comes to the factory in sheets twenty inches wide, six feet long and about one fiftieth of an inch in thickness. It is cut into strips the width of two pens placed end to end and is put into the fire in a heavy iron container and heated to a white heat, which makes it very soft. It is then immersed in acid to remove the scale formed by the annealing process and then rolled to the required thickness for cutting our blank pens.

It then goes to the machine which cuts out the blanks or flat pens. These blanks are then sent to the piercing machines which make the center hole in the pen and the cuts in the side, which regulates its degree of flexibility. The rolling process has hardened the steel so that it is necessary to again put the pens back in the fire at this stage to re-anneal them before they can have the name stamped on them. After coming from the second annealing, they go to what is called the marking machines and have the name and num-

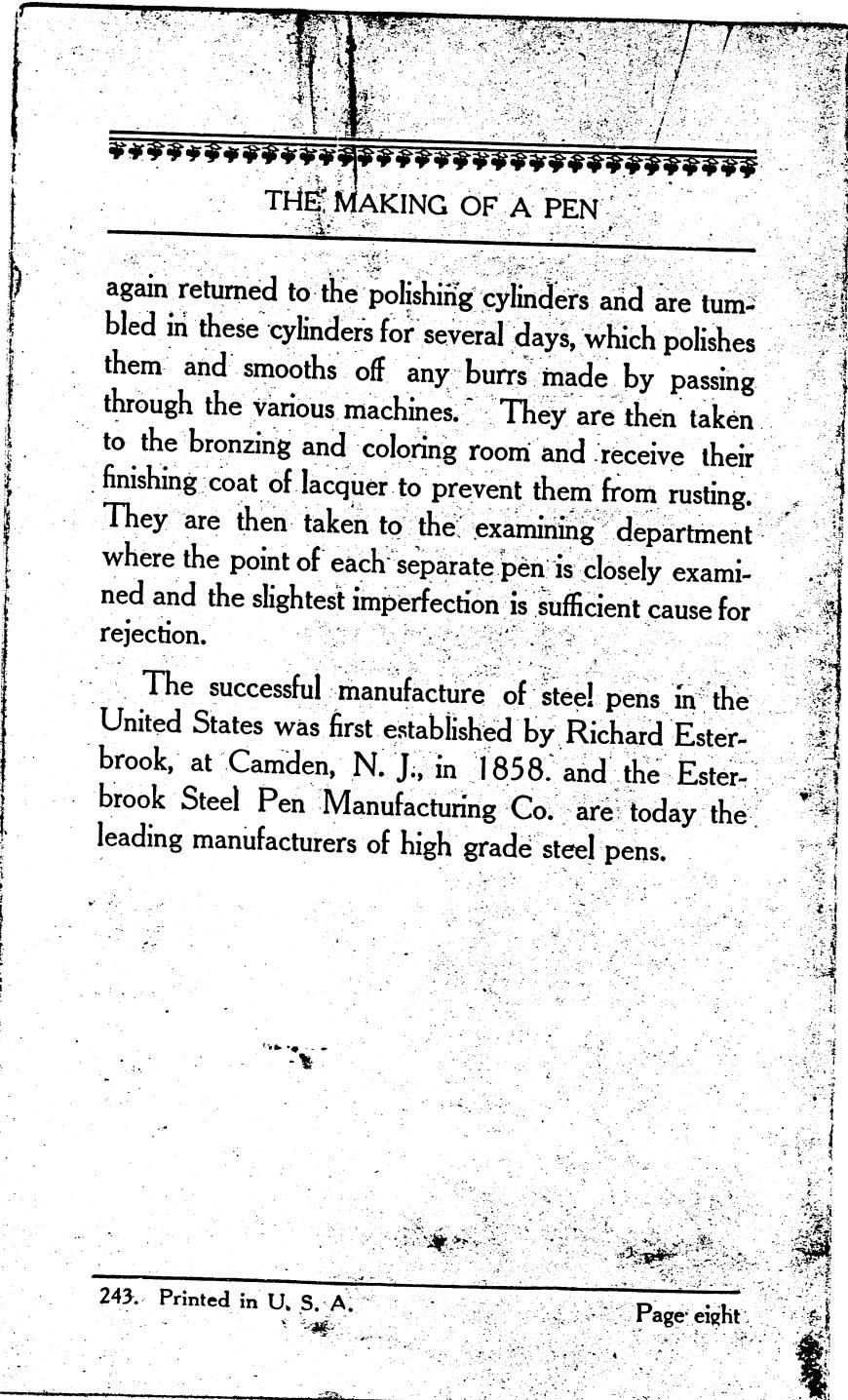
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ber stamped on them. From this department, they are sent to what is called the raising room, here they are put through machines that raise or round them into shape. Then they go back into the fire again and are heated to a cherry red heat and then are immersed in oil while at top heat. This hardens them and makes them brittle. They then go to the tempering room where the temper is drawn down by heat until they are very springy and elastic. This requires a very high degree of skill. If the pen is not properly tempered it is no good whatever. After being tempered, they are put in revolving cylinders with lime to take the scale off, formed by hardening and tempering. Then they go into polishing cylinders and are turned for several days in polishing and smoothing material. From this department, they go to the grinders where each point is separately ground by hand. From here they go to the slitting department where the points are slit. This is a very delicate operation requiring the greatest skill and care. The points are slit in the same manner as if you were to take a pair of shears in your hand and cut from the point of the pen into the pierce hole. If a pen is not slit exactly in the center, it will not write well and will be very scratchy. After being slit, the pens are



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again returned to the polishing cylinders and are tumbled in these cylinders for several days, which polishes them and smooths off any burrs made by passing through the various machines. They are then taken to the bronzing and coloring room and receive their finishing coat of lacquer to prevent them from rusting. They are then taken to the examining department where the point of each separate pen is closely examined and the slightest imperfection is sufficient cause for rejection.

The successful manufacture of steel pens in the United States was first established by Richard Esterbrook, at Camden, N. J., in 1858. and the Esterbrook Steel Pen Manufacturing Co. are today the leading manufacturers of high grade steel pens.